Hey -- here are Jessica's comments on the sediment transport model (in addition to comments already captured by Earl).

We'll see you tomorrow.

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-------- Original Message --------
Subject: comments on Portland Harbor Sed Transport model
Date: Thu, 05 Nov 2009 16:37:48 -0800
From: Jessica Winter <Jessica.Winter@noaa.gov>
To: Robert Neely <Robert.Neely@noaa.gov>

Condensed version, leaving out comments that Earl@USACE already made.

1. According to the model, "nearshore areas are generally depositional environments but disturbance by anthropogenic activities is widespread" (p 7 of revised phase 2 model), i.e. some sediment is temporarily resuspended and then redeposits. If boat traffic-induced scour cannot be simulated in the model, identify this as a source of uncertainty to be carried through in the FS on a site-specific basis. _Quantify how much area is affected by this, map it so that we know how it corresponds to potential remediation projects, and in each area, estimate the difference between model output and calibration/validation data. Estimate how __far resuspended sediment might travel under a range of flow conditions_.

2. Comparing model runs against empirical data, it is sometimes difficult to assess the ability of the model to represent the data because of the resolution of the bathymetry, which is +/- 7 cm. 7 cm over a 2 year model run (for validation, or a 1 year model run for calibration) is not negligible- at least on the Duwamish a deposition rate of 3.5 cm/yr would be considered enough to justify using MNR instead of active remediation, so _should we be using longer model runs in order to get a better understanding of long term sedimentation/erosion trends and to reduce the effects of bathymetry measurement error?_

3. What does it mean that "the area modeled includes the entire LWR from RM0 - RM 24.1, however the modeling effort is focused on RM1-RM11.8"? (2009 HST model report p 2) Do you model the whole area but only do calibration for this part, or calibrate the whole area but you only present results for this part? Please clarify.

4. When comparing model vs. empirical data (e.g. in the spatial scale analysis), please use root mean squared error instead of arithmetic mean to assess model accuracy. Averaging overpredictions and underpredictions sitewide just tells us whether or not the model is biased, but does not tell us how precise the model is.
Also, the Aug 09 presentation to EPA (ppt file) includes a spatial scale analysis slide - where is the spatial scale analysis in the HST model report? I couldn't find it in the 09, 06, or 05 reports.

5._ Assess and discuss in the modeling report whether the number of Sedflume cores and their distribution is adequate to represent a 9-mile long site._ How was the number 19 chosen? If 19 was chosen to achieve some statistical goal, is 14 (the number of cores actually used in modeling cohesive sediment transport) too few?

6. The May 2009 HST model report conflicts with the more recent (Sept 09) powerpoint presentation on the Portland Harbor Collaboration Portal website regarding interpolation of erodibility parameters to grid cells. Model Report lists 3 methods and uses the third (grouping cores) while the presentation says that erodibility parameters were assumed horizontally constant over the site. Which method was used?

/ 7. /Sensitivity analysis as described in the HST model report might better be termed initial calibration, because basically the modelers were looking at "what values of these parameters (e.g. drag on structures, deposition and resuspension rates) make the model work best." Their analysis of different scenarios (high and low flow at upstream and downstream ends) would count as sensitivity analysis. However, the _sensitivity analysis and uncertainty analysis should be redone after the model is completely calibrated _so that we can have a measure of how sensitive the calibrated model is to different inputs, and of how much uncertainty is associated with the final model as it will be used.

/I also agree with Earl Hayter's comment regarding the //WRSPADJ adjustment to erodibility parameters. /

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